VI. Recommendations and Implementation Plan

INTRODUCTION

In this section, recommendations are made that will impact the City's functionality including organizational structure, operations, and how investments are made. This will challenge the organization on many levels, and will also include the challenge of change.

We have listed the associated Findings at the conclusion of each Recommendation. The Findings may have a direct or indirect relationship to the recommended solution.

CHALLENGES TO CHANGE

RESISTANCE TO CHANGE

Change challenges any organization. The City of Long Beach is no exception. Fundamental improvement in information technology organizational structure and management practices can only be realized if habits, attitudes, work practices, and accountabilities change accordingly. Many organizations have a strong start down the path to information technology organization and management reform only to give up and take the easy road of the status quo (e.g. not partnering, limited communications, single function and stand-alone applications). Change is difficult.

TURF ISSUES

There are "haves" and "have nots" among the various City departments. It is not uncommon for the "haves" to feel like they are prone to lose, while the "have nots" stand to gain the most. This issue could be compounded further by concerns about loss of control (data, systems, etc.), departmental squabbles, and the potential negative impacts to service delivery if system resources are shared. The fact remains that there will not be enough resources available for any one department to "go it alone." Cooperation is no longer just a good idea, it is a business imperative. A more extensive discussion on related issues and governance is located in *Section V* of this report.

ONGOING COMPETITION FOR INFORMATION TECHNOLOGY PROFESSIONALS

Information technology support professionals enable the City to deploy and effectively manage its information technology infrastructure. The City's ability to recruit and retain information technology staff could determine how well it can support its installed base of technologies and whether it can take advantage of emerging technologies and be prepared for an eventual ERP implementation. The forecasted demand for information technology talent remains high. As discussed in *Section I* of this report, professional technical training and an appropriate resource skill mix are essential to a future information technology organizational structure and effective service delivery.

INADEQUATE INVESTMENT

The interviews and focus group sessions conducted as part of the Information Technology Optimization Study reveal many City personnel feel information technology investing has not been a priority of the City. Further, most departments do not have an adequate level of technical support to realize the full potential of the installed systems. Because of this, information technology staff often spends their time reacting to problems rather than being an enabler of improved business functions and services. Failure to invest appropriately could most likely hinder the City's ability to deploy and support new means of service delivery using existing and emerging technologies. As identified in the prior section, a limited fiscal focus and lack of sufficient investment has resulted in aging technology and frustrated end-users.

UNCLEAR ROLES FOR ITAC / CTAC

With a renewed charter, appropriate representation, and engagement in strategic discussions both ITAC and CTAC can add valuable input to the CIO in accomplishing the information technology mission and be vital to the City's goal to achieve technology effectiveness. Historically, these advisory boards started strong with a lot of enthusiasm and passion for change. Over time, however, the focus seems to have become diffused. Agendas are now a status report of projects rather than spirited dialogue of strategic issues. Due to this changed focus, members delegated their responsibilities to lower level managers and disengaged from the process

Recommendations are presented by topic in the same order as discussed in the Findings section. In all cases, the first line will be a numbered statement of the recommendation and then there will be supporting discussion. If there are multiple recommendations within a topic, these will each be identified. This section contains recommended solutions to the issues and deficiencies outlined in the analysis and findings section above. The recommendations follow the major areas evaluated, which are:

- Governance
- Service Delivery
- Management Practices

GOVERNANCE RECOMMENDATIONS

Introduction

The recommendations related to improving the City's information technology governance structure and processes are designed to address the concerns and issues identified earlier.

There are a number of alternative processes that can be used for technology governance, each with advantages and disadvantages. Governance alternatives vary depending on an organization's culture, operating environment, and management's approach and style. There are some fundamental elements that may be applicable when considering which governance alternative best suits the City of Long Beach.

OPTION 1 – STATUS QUO

This option would maintain the current structure and oversight approach, without modification or only incremental improvement. It would retain the current situation of optional participation without an enterprise-wide approach to technology planning, coordination and communication of needs and solutions.

OPTION 2 – STRICT CENTRALIZED CONTROL

This option is one where one person or group of individuals makes all of the decisions regarding technology project funding and priority setting. A benefit of this approach is that it is usually designed to have an enterprise-wide view with a central point of accountability. The centralized control approach can also provide for complete standardization of process and standards for governance.

This approach brings some challenges in that it often results in less flexibility than other models. It also can limit input and participation from the departments depending on how much control is exercised.

OPTION 3 – PARTICIPATORY

This option provides for input from different levels within the organization. It can also accommodate the creation of an enterprise-wide view. By its nature, it provides for open and inclusive governance processes. It also includes a process to validate recommendations coming from the various points of input. However, it may not include a strong decision making process or have a process to address enterprise-wide priority setting due to a lack of designated ownership. This approach can be very time-consuming and may end up being focused more on process than results.

OPTION 4 – INDIVIDUAL AUTONOMY

This option is a decentralized governance process with each department making their own independent decisions. Under this option each department advocates to top decision makers for their own needs independently from each other. While each department can focus solely on their needs this option does not provide for an enterprise-wide governance process. The result of this option is two-fold. First, it results in duplication and increased costs because enterprise-wide synergies and cost effectiveness is not a consideration. Second, it is very difficult to be equitable when governance processes are not linked to potential cost saving approaches.

OPTION 5 – HYBRID

This option is a combination of all the options: Status Quo, Centralized, Participatory, and Individual Autonomy. Fundamentally this provides for governance processes that can best meet a changing environment from an operational and funding perspective. It capitalizes on the best of each alternative and supports the view that technology is a strategic resource. This option can be designed to accommodate an enterprise-wide view and support unique individual departmental needs. It also reflects and accommodates the dynamic nature of technology.

Our analysis of the collected information from the interviews, focus groups, survey respondents, and document reviews were the basis for developing conclusions regarding the City's governance processes. The overall conclusion is that the City has and will continue to face changing needs and expectations on the part of its internal and external constituencies. This requires a greater emphasis on internal coordination at the policy level for information technology projects.

Based on this conclusion, we recommend a more formalized, streamlined and executive supported governance process. This includes the processes for reviewing, approving and managing information technology projects taking place in the City. Strengthening the governance processes in the City will help to enhance information technology planning, management and accountability.

The specific recommendations below outline proposed solutions and approaches to achieving this objective.

Governance Process

RECOMMENDATION G-1: ADOPT A NEW GOVERNANCE STRUCTURE AND PROCESS

The adoption of a more formalized process that is supported at the executive level will enable the City to achieve organizational goals, establish successful management practices, and achieve accountability of its information technology projects from inception to maintenance. The review and approval process requires adherence to specific roles and responsibilities by key departmental personnel.

We recommend the implementation of a "hybrid" governance approach to support this recommendation because it can utilize a number of elements currently in place and expand upon their effectiveness. It is designed to have more involvement on the part of the users and can assist in providing flexibility to meet the changing needs of the City.

Recommended Structure and Process

Exhibit VI-1 outlines the recommended governance structure and roles designed to provide for accountability at the CIO level, input from constituent departments and enterprise-wide policy setting capabilities.

EXHIBIT VI-1: RECOMMENDED GOVERNANCE APPROACH STRUCTURE

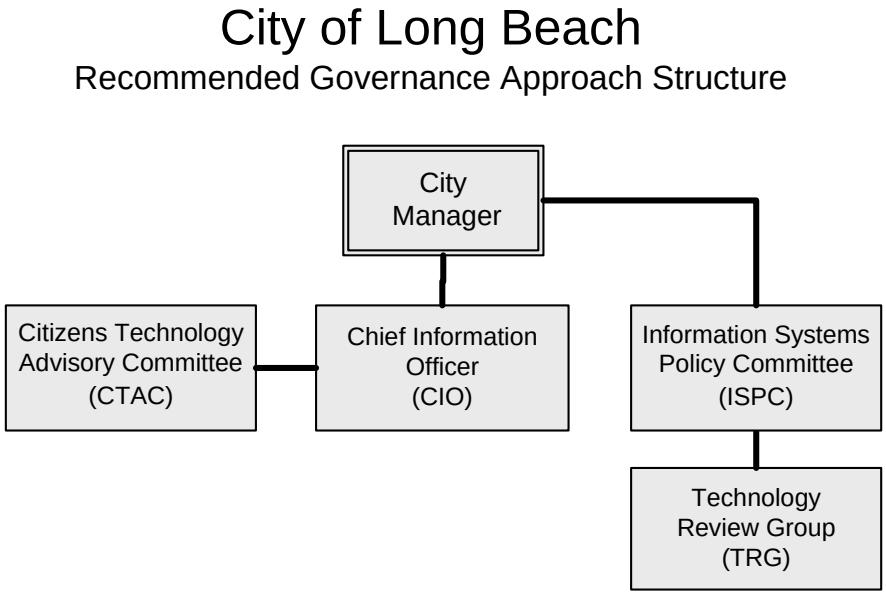
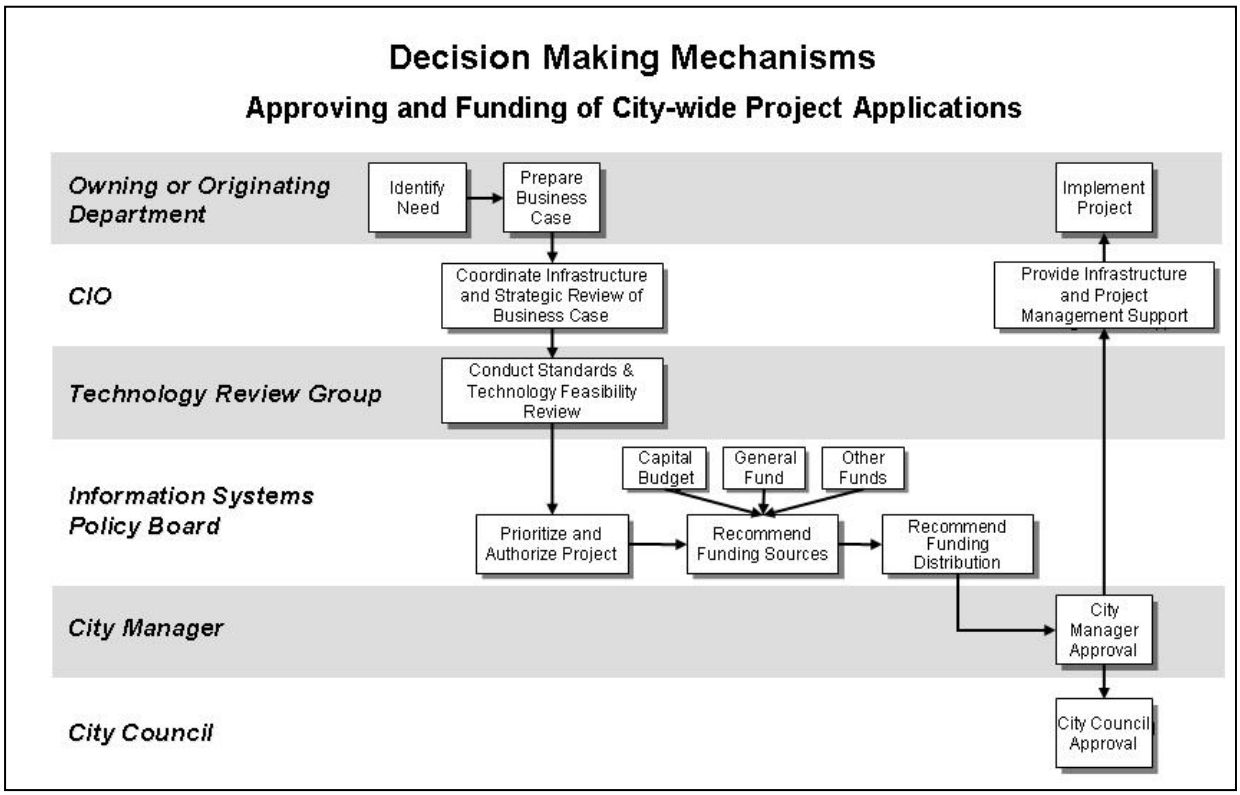


Exhibit VI-2 depicts how the decision making process can work within the recommended hybrid governance approach. The intent of this decision making process is to provide involvement by users throughout the City related to City-wide technology projects. The Technology Review Group (TRG) would review technology projects and activities from a technical perspective (compatibility with standards, interrelatedness with operating or planned systems, implementation requirements, etc.). The Information Systems Policy Committee (ISPC) would review technology projects and activities from a policy perspective (enterprise-wide benefit, costs, desired organizational vision, etc.). The process includes advisory and policy groups and is designed to support timely and well supported information for decision making.

EXHIBIT VI-2: DECISION MAKING MECHANISMS



THE FINDINGS ASSOCIATED TO THIS RECOMMENDATION ARE:

- Enterprise-wide View
- Governance Process
- Technology as an Enterprise-wide Strategic Asset
- Investment in Technology
- Information Technology Leadership

RECOMMENDATION G-2: ESTABLISH CLEAR ROLES AND RESPONSIBILITIES TO STRENGTHEN THE GOVERNANCE PROCESS

In establishing a new governance model for the City, it is critical that clear roles and responsibilities be established for all of the participants in the governance processes. We recommend the following have specified roles and responsibilities regarding information technology planning, the funding approval process, and ongoing monitoring and accountability:

- City Manager (decision making)
- Chief Information Officer (recommends strategic policies to City Manager and can serve as Chair of the Information Systems Policy Committee (ISPC))
- ISPC (recommends approval and provides on-going accountability)

- TRE (provides input regarding planning, standards review, technology feasibility and compliance)
- CTAC (provides input from a stakeholders perspective)

The successful operations of the various committees depend on management's interest to work together, share information and embrace an enterprise-wide operating philosophy and management perspective. Specifically, the management of successful information technology depends on:

- Key personnel understanding the importance of information technology policy and planning
- Adherence to the established review and approval process
- Adopting, implementing and reporting of accountability measures
- Embracing a "no surprises" approach to information technology projects

City Manager

The City Manager receives a recommendation from the ISPC and determines the final disposition of a proposed technology project. Under the recommended Hybrid governance approach the City Manager would have more enterprise-wide information when making decisions regarding technology projects. The City Manager may require the presence and participation of the project sponsor, CIO and/or a member of the ISPC.

Policy and Oversight Committees

In addition, there is a need to have two internal committees as part of the overall technology governance approach. One to provide policy level decisions (Information Systems Policy Committee) and one to provide a forum and "filtering" approach on potential City technology projects from a user perspective (Technology Review Group).

Information Systems Policy Committee (ISPC)

The ISPC would consist of Department Heads and the City CIO. The CIO will evaluate information technology-related projects and ensure that key technology decisions are consistent with the City's vision, values, strategies and information technology standards, practices and governance. The ISPC will make recommendations to the City Manager and add value by providing an executive level enterprise-wide analysis of risk versus return concerning information technology investments. The committee would be responsible for ensuring that technology is strategically focused and aligned with the City's business and policy needs. This committee would promote an enterprise-wide perspective regarding information technology projects and prioritize and recommend funding and funding sources for citywide projects. It would also resolve resource allocations for enterprise information technology projects. The committee will meet monthly, or on an as-needed basis.

Primary roles of the ISPC are to:

- Evaluate key business strategies identified by the City Council and the City Manager to ensure that planned technology projects address established strategies

- Provide the catalyst for changing information technology-related management and business practices within the City to guide necessary transformation of the organization to meet business needs
- Oversee the development of the annual Information Technology Master Plan (ITMP) which encompasses enterprise-wide technology investment requirements
- Review and prioritizes enterprise-wide information technology investments for the City Manager's consideration
- Make recommendations to the CIO on the budgeting of enterprise level projects
- Ensure that proper risk/investment analysis is completed for any proposed information technology project greater than an established threshold
- Approve the information technology enterprise-wide functional or performance standards which establish and support interoperability and functionality. The ISPC also recognizes that departments may have business specific requirements that may not fully align with enterprise-wide standards, and thus allow for exceptions and variances to these policies and standards
- Measure information technology value by identifying key information technology performance measures and metrics and review them regularly. ISPC should monitor the level of service from the City information technology organizations and review the progress of information technology projects
- Review policies and recommend updates to existing technology-related policies in alignment with business goals and strategies. Information technology policies should be reviewed annually to ensure that business practices are aligned with changes in technology and industry best practices

The ISPC adheres to the following strategic goals:

- Establish an enterprise information technology infrastructure that is flexible, reliable, adaptable, and scalable and aligned with business requirements
- Use technology to provide cost effective means to achieve business results and improve operating efficiency
- Align enterprise level information technology policies with business needs, which are measured against industry best practices
- Ensure the measurement of technology projects and support mechanisms providing cost-effective and consistent customer service
- Ensure that the use of technology proactively assures integrity, privacy, confidentiality and availability of enterprise information
- Ensure that, if proprietary brand name standards for technology investments are used, proper purchasing procedures are followed and are reviewed on a regular basis

Once a year members of the ISPC should meet to select a member to serve as Chair. Duties of the Chair should include:

- Develop an annual calendar of ISPC meetings
- Preside over ISPC meetings
- Coordinate with the CIO the issuance of agendas and minutes for ISPC meetings
- Represent the ISPC before City Council and Council Committees as required

The ISPC is in an advisory relationship to the City Manager making recommendations as appropriate.

Technology Review Group (TRG)

The TRG would consist of experienced technical staff from departments and the central information technology organization. It would serve as the forum for discussing departmental and citywide technology needs and ensuring that information technology projects; feasibility, policies and standards are technically sound, supportable and consistent with the City's technical standards and industry leading practices. The TRG would provide technical expertise and recommendations to the ISPC. This group would also assist with communication and coordination regarding information technology projects and identify opportunities for efficiency gains through enhanced cooperation, coordination, and collaboration.

The primary roles of TRG are to:

- Provide a technical perspective and recommendations to departments prior to the ISPC review
- Define and communicate a template to be used by departments to review specific technology aspects of project requests, standards, exceptions and variation requests
- Review department-specific project requests, standard's exceptions and variation requests consistent with the needs of the individual departments
- Report to the ISPC on specific technologies, providing technical review and advice on proposed information technology investments
- Advise the ISPC on technical and architectural issues related to enterprise-wide or specific departments' technology investment
- Report to the ISPC on research and development efforts, and present information and recommendations on emerging technologies and upgrades that would potentially benefit the City
- Provide project management support to the ISPC to ensure information technology projects have proper technical risk/investment analysis completed and are properly planned, staffed and executed
- Establish a milestone review mechanism to ensure that information technology projects meet their stated goals and present quarterly updates to the ISPC.
- Establish and measure a set of information technology metrics that can be presented to the ISPC that provide information on the value and efficiency of information technology and related services in the City
- Develop and annually review technical security and enterprise-wide policies in conjunction with the Information Technology Department (ITD) Support Services Bureau. TRG should ensure that enterprise-wide security policies are aligned with current technology capabilities, business strategies and leading industry practices.
- Ensure that enterprise-wide technical standards are consistent with business goals and strategies to maximize the effectiveness of technology investments
- With appropriate procurement consultation, define a process for how performance or functional standards are developed, and how departments can request exceptions to the standards

- Define a process for evaluating how emerging technologies may impact current technical standards and make recommendations in the utilization of these new technologies

TRG members may also provide assistance to the business analysts and/or department directors in identifying business requirements and consolidating departmental business / information technology needs into ISPC requirements.

Each department will select one member to serve on the TRG. Departments could be represented by a business analyst (see Business Analyst section) or another qualified person. Two Information Technology Department members-at-large, selected by the CIO should also sit on the TRG. Initially, the CIO's designee could serve as Chair of the TRG with the group determining their operational structure on an ongoing basis.

Each TRG member may also be responsible for establishing and chairing a sub-committee for a specific complex technical project review.

We recommend the TRG provide technical support directly to ISPC on all matters of technology expertise such as information technology projects, future technology options, and department exceptions to enterprise information technology standards. The TRG also indirectly advises departments of information technology standards, policies and technology review submission requirements.

CTAC

We recommend that the City strengthen the charter of the CTAC. This group can be a vital part of the technology governance process networking with key contacts and resources to assist the City with technology and business enterprise development.

The CTAC provides valuable input from the external stakeholders' perspective on the City's use of technology and acts as advisors to the City's CIO.

The primary role of the CTAC is to:

- Provide an objective perspective of the City's strategic use of technology
- Advise the City as to the potential benefit of new technology
- Provide feedback on technology plans

The CTAC should consist of individuals from the City's major industries. It is in an advisory relationship to the CIO. The CIO should consider CTAC's recommendations for information technology technologies and projects.

THE FINDINGS ASSOCIATED TO THIS RECOMMENDATION ARE:

- Enterprise-wide View
- Governance Process
- Technology as an Enterprise-wide Strategic Asset
- Advisory Committees
- Organization Structure

- Information Technology Leadership
- Information Systems Master Plan
- Communications
- Training
- Project Management
- Resource Skill Mix

RECOMMENDATION G-3: CREATE A CITY CIO POSITION

A strong governance structure and process requires strong information technology leadership. Other like-sized cities have taken this approach to strengthen their effectiveness of technology. While we include the CIO in additional governance process recommendations, the CIO position is also an integral part of the service delivery recommendations. We provide details and responsibilities of this position in those recommendations.

THE FINDINGS ASSOCIATED TO THIS RECOMMENDATION ARE:

- Enterprise-wide View
- Governance Process
- Technology as an Enterprise-wide Strategic Asset
- Investment in Technology
- Organization Structure
- Information Technology Leadership

RECOMMENDATION G-4: INCLUDE CIO IN THE POLICY PROCESS

As identified earlier, the City is planning on a number of initiatives that include technology, such as, 311, reverse 911 and City-wide Wi-Fi. These and many of the technology decisions are made during the City's annual planning and budget processes. The CIO that we have recommended above should have a formal role in these decisions, similar to the role of Human Resources or Budget departments, where before a decision is made on any technology-related project, the CIO should provide input to the decision makers about the policy impact of decisions on the overall technology delivery of the City. This would include whether the proposed technology fits within the City's ISMP, whether there would be additional costs for staff to support the technology, and whether other departments could benefit from the technology and should be included in any implementation or development effort. This authority would be regardless of funding source.

THE FINDINGS ASSOCIATED TO THIS RECOMMENDATION ARE:

- Enterprise-wide View
- Governance Process
- Technology as an Enterprise-wide Strategic Asset
- Investment in Technology

- Information Technology Leadership
- Communications
- Fiscal Focus

SERVICE DELIVERY RECOMMENDATIONS

Introduction

As outlined in our findings, there are several opportunities for improving upon the City's service delivery model. Modification of the City's information technology service delivery model will address many of the issues cited in our findings, while taking advantage of the strengths of the existing model.

Service Delivery Alternatives

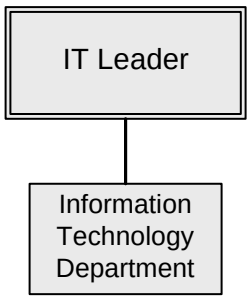
Based on our evaluation of the City's information technology objectives and needs, we considered four types of alternative organizational structures as well as the potential benefits and risks associated with each alternative. The alternative models are:

- Centralized
- Decentralized
- Outsourcing
- Hybrid

CENTRALIZED MODEL

The centralized model depicted in *Exhibit VI-3* is one where the organizational structure provides service delivery from a single centralized group. All information technology resources are housed in a central information technology organization and users directly contact this group for service. While this option provides for a standardized enterprise-wide approach to service delivery it also has some limitations. Departments or end-users may be restricted in the amount of participation and influence in the type, quantity, and timeliness of service delivery. This lack of involvement could also affect the responsiveness to changing business needs.

EXHIBIT VI-3: SERVICE DELIVERY ALTERNATIVE – CENTRALIZED



Potential benefits from this organizational structure are:

- Opportunity for potential savings as a result of complete standardization
- Costs may be reduced due to more cost effective utilization of resources
- It may foster future application and data sharing efforts for selected departments

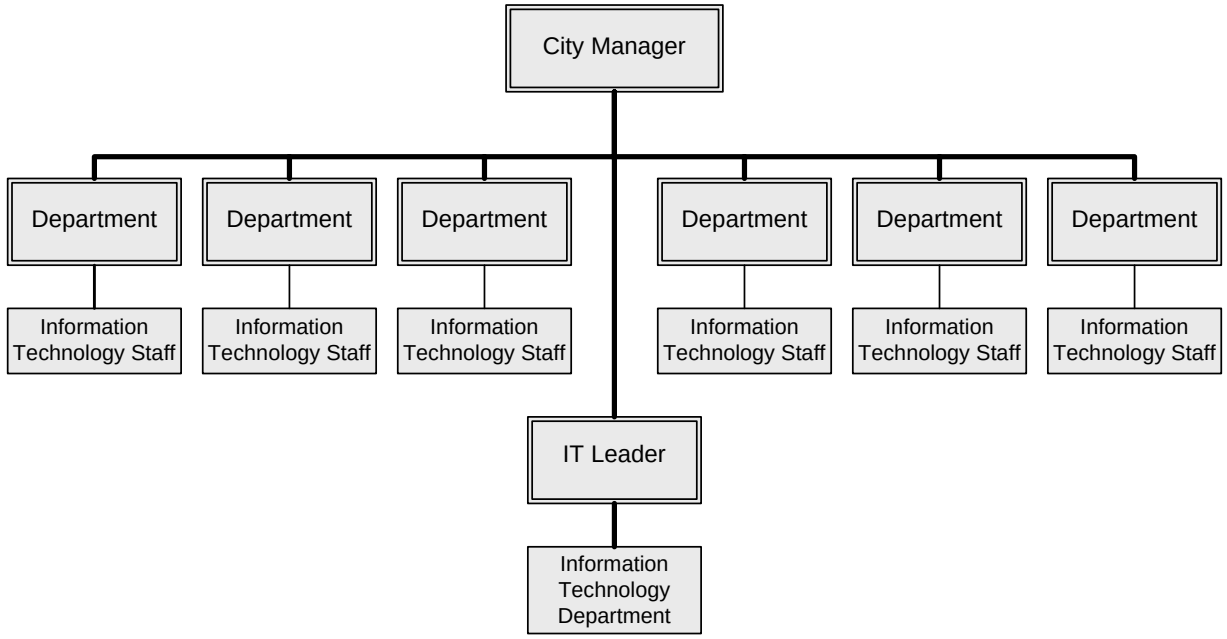
Potential risks associated with this organizational structure are:

- Work gets transferred, but reductions may never be realized
- Displaced workers
- It puts all "eggs into one basket" (e.g., higher risk, single point of failure)
- Limited customer information technology management support
- Less flexibility to the end-users
- Potential of lower level of customer service
- Standardization may accelerate some information technology investment costs

DECENTRALIZED MODEL

This organizational structure provides definitive departmental autonomy for information technology services. Departments have their own internal technical resources to address their specific business and functional needs. However, this structure does not promote an equitable customer-facing enterprise-wide service delivery or standards. It also could be very costly due to duplication of resources. It is assumed there would be a need to have some nominal central group to provide limited enterprise-wide applications and infrastructure needs (i.e., phones, City-wide financial and HR systems) as depicted in *Exhibit VI-4*.

EXHIBIT VI-4: SERVICE DELIVERY ALTERNATIVE – DECENTRALIZED



Potential benefits from this organizational structure are:

- Some limited enterprise-wide standardization under the ITD
- Each department has equal access to top management
- Independent information technology organizations within each department
- Creates greater integration between business units and information technology support
- Information technology services are closer to the end-user

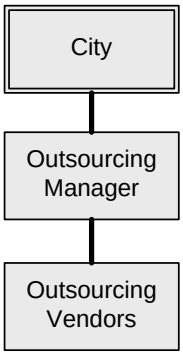
Potential risks associated with this organizational structure are:

- Duplication of costs
- Each department replicates current technology services
- Does not support enterprise-wide operations
- Governance difficult to establish and maintain
- Dilution of enterprise-wide business alignment
- Data and information is fragmented, limits management insight into operations and decision making

OUTSOURCING MODEL

This option is where all technology service delivery is provided by an outside vendor which may include the technology infrastructure as shown in *Exhibit VI-5*. While this option can reduce costs in the short-term there are significant risks associated with it. Under an outsourced service delivery model, the City would enter into a contractual relationship with a service provider to manage all technology infrastructure and applications.

EXHIBIT VI-5: SERVICE DELIVERY ALTERNATIVE – OUTSOURCING



Potential benefits from this organizational structure are:

- Reduced cost in the short term
- Increased information technology expertise from the outsourcer
- Ability to improve service levels in the short term
- Eliminate asset management and operational requirements of data center
- Staff freed to concentrate on core business needs

- Reduced need to hire and retain specialists

Potential risks associated with this organizational structure are:

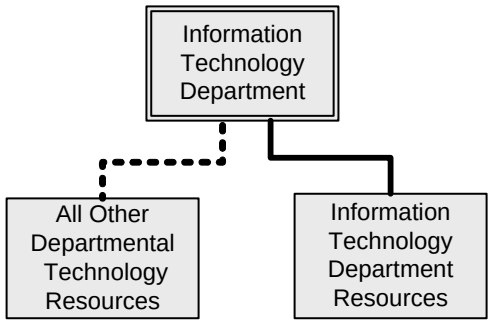
- Uncertainty of future costs
- Loss of control over technology direction and management of information technology resources
- Some disruption of business operations
- Difficult to manage outsourcing contract
- Potential personnel displacement costs
- Reduced employee morale for remaining staff
- Less flexibility for immediate actions and emergencies
- Permanent decision – bringing all environments back under City operation would be difficult and costly
- Loss of internal information technology expertise
- Future saving from technology improvements questionable
- Outsourcing a problem area does not mean the problem is resolved

> *"…The natural tendency may be to get rid of things that are not working well. This tendency must be avoided when considering which functions to outsource. Why? Because business requirements cannot be adequately communicated with a broken process, and managing a process effectively requires an understanding of how it is supposed to work. The process must be fixed before it can be outsourced…"*
>
> SOURCE: MANAGING THE RISKS OF OUTSOURCING: A SURVEY OF CURRENT PRACTICE AND THEIR EFFECTIVENESS, PROTIVITI INDEPENDENT RISK CONSULTING, INC., JUNE 2004

HYBRID MODEL

This structure, as shown in *Exhibit VI-6*, provides for a combination of service delivery to include both centralized and decentralized structures. One of the main benefits is providing increased participation across the enterprise in the type, level and quality of service delivery. This structure can accommodate the creation of an enterprise-wide approach to service delivery, as well as result in a more effective and efficient use of resources.

EXHIBIT VI-6: SERVICE DELIVERY ALTERNATIVE – HYBRID



Potential benefits from this organizational structure are:

- Strategic placement within the City's overall organization with high level of visibility, as well as direct policy and strategic involvement
- Moves information technology from a subordinate, reactive process to a proactive and strategic set of processes
- Adopts an enterprise-wide operational view with appropriate responsibilities
- Views information technology as a strategic resource and reflects the City's value of information technology
- Supports unique departmental needs
- Recognizes limitation of available resources

Potential risks associated with this organizational structure are:

- Change from current structure
- Lack of support by department leadership

In the information economy, successful organizations integrate information technology and business strategies in order to maximize information value, attain business objectives and improve service delivery. The effective use of information technology is critical to the overall performance of the City.

We are recommending a number of organizational changes and with that a number of recommended changes to roles and responsibilities. We believe that the City should implement the character and essence of the roles we are recommending, however, we recognize that changes or modifications may be necessary to our recommended organizational positions to accommodate current City staff skills and available resources.

Overall, to achieve the effective use of information technology the City should implement an information technology organization that is:

- Reflective of a hybrid structure
- Organized in a participatory mode - builds constructive team and departmental relationships with clear roles and responsibilities between information technology professionals, users and business management
- Based on an enterprise-wide vision and strategy
- Led by a CIO

Information Technology Organizational Structure

RECOMMENDATION SD-1: RESTRUCTURE TSD

As part of our optimization review of the current TSD, we evaluated the effectiveness of information technology's placement within the City's organization and the structure of TSD itself. Based upon our analysis, we believe TSD, although currently a department, operates at a level too low in the overall organization. If information technology is to be viewed as a critical

resource of the City, the Information Technology Department (ITD) needs to be at a level in City management to understand, contribute and be part of the City's vision and business strategy. We are using ITD to denote a different organizational structure than is currently in place in the City**. From this point on in the report, further references to TSD will become ITD.**

One of the reasons departments currently question the value of information technology within the City is the difficulty of linking departmental objectives and strategy to information technology investments, services and performance. Based on interviews and focus groups discussions, at times departments and information technology sit on opposite sides of a chasm. On one side, key stakeholders and planners create and link organizational strategy with department objectives and then expect information technology to meet expectations. On the other side of the chasm information technology sometimes creates and delivers services that miss the mark, according to the departments.

The City's information technology organization plays a vital role in enabling the enterprise to respond to new opportunities and challenges. According to the Gartner Group[1] information technology organizations will focus on managing end-to-end information technology services in 2005-2006 by standardizing information technology infrastructure, re-engineering information technology management processes, implementing automation, and becoming more business-centric.

The ITD should be an organization that:

- Selects and integrates the most appropriate technology platforms and standards to meet both current and future business needs
- Selects and implements the right methods and overall approach to systems development to improve productivity and quality
- Introduces and sustains a strong "customer service" attitude throughout the information technology function
- Establishes the financial, technical and management policies necessary to manage the information technology function
- Strikes an appropriate, cost effective balance of hybrid management of information technology service delivery and departmental information technology support
- Responds to local user needs, and yet is accountable to support and maintain the City's information technology policies, standards, and values

In addition to the guiding principles and perspectives stated earlier we also included some additional criteria in formulating our recommendation of a new information technology organizational structure for the City. Some of the additional criteria for this structure are:

- Direct relationship with organization's mission
- Limitation of resources
- Desire to provide new and expanded technology services
- Ability to manage:
  - Workable standards

[1] Predicts 2005: IT Operations Must Transform Service Delivery, Gartner

  - Performance measurements

- Defined technical core competencies
- Relationship with private sector

The new ITD organizational structure we are presenting is one that:

- Affords ITD representation at the policy making level within the City
- Provides services on an enterprise-wide basis
- Allows for departments to have an integral role with ITD and its bureaus
- Establishes enhanced lines of communications internally and externally to ITD
- Facilitates alignment of the City's vision and strategy with technology solutions
- Moves ITD from a perception of a "back-office" support function and service unit to one of a strategic asset and technology leader
- Institutes an organizational structure that builds the requisite skills, infrastructure and processes that lend themselves to a future master ERP implementation effort

ITD Bureaus

Consolidating the bureaus would focus responsibilities and accountability in a more concise fashion. We believe that ITD should reduce the current four bureaus to two: Electronic Infrastructure and Support Services. The Electronic Infrastructure bureau would deal with the technical infrastructure. The Support Services bureau would focus on supporting the users. It would be the first place users would go for technical support and would serve as the user's liaison to the ITD, providing a single point of contact for the users. In addition to the activities currently performed by the Customer Services Bureau, we would add Training, Planning and Standards.

Support Services Bureau

The Support Services Bureau would be led by an information technology department manager and have two divisions with direct reporting responsibility as shown in *Exhibit VI-7*. The two divisions are:

- Customer Support
- Training, Planning and Standards

Customer Support would encompass the following functional areas:

- Help Desk
- PC support/replacement and infrastructure acquisition
- Personal communications devices
- Video communications and City cable/franchise
- Reprographics
- Administration support (Finance and Personnel)

The Training, Planning and Standards division would include:

- Information technology standards and guidelines

- Disaster planning and recovery
- Information technology training
- ITMP
- Enterprise security (hardware, software and policy)

Two additional areas would also have a reporting relationship to the Support Services Bureau manager. They are:

- Business Analysts – either direct or indirect reporting relationship (to be discussed later in this section)
- Outsourcing Vendors / Suppliers

Electronic Infrastructure Bureau

The Electronic Infrastructure Bureau would be led by an information technology department manager and have three divisions with direct reporting responsibility as shown in *Exhibit VI-7*. The three divisions are:

- City Applications and Support
- Data Center
- Network Services

City Applications and Support would have the following functional / technical areas:

- New application development and groupware
- Applications support
- GIS

The Data Center division would include:

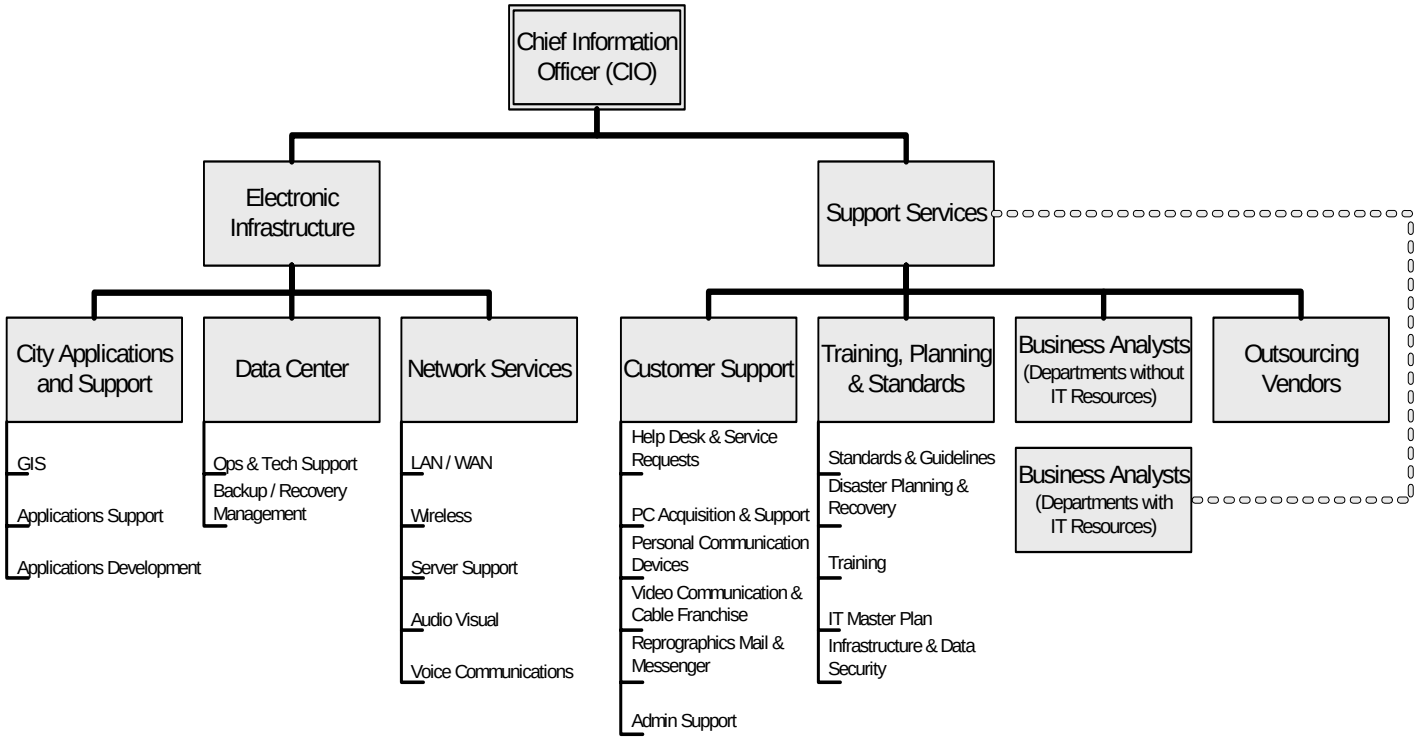
- Data Center operations
- Data Center technical support
- Backup and off-site recovery

The third division, Network Service would have the following functional / technical areas:

- LAN/WAN and server support
- Voice communications
- Microwave
- Mobile/Portable radios and mobile data
- Wireless
- Audio-Visual

Both the Electronic Infrastructure and Support Services Bureau Managers directly report to the CIO. Likewise, staff should be accountable to support enterprise information technology management, governance and organizational principles. The CIO should report directly to the City Manager and work closely with the City's executive management team in leading day-to-day operations. We believe the CIO should be at the highest policy level possible.

EXHIBIT VI-7: RECOMMENDED ITD ORGANIZATIONAL STRUCTURE



THE FINDINGS ASSOCIATED TO THIS RECOMMENDATION ARE:

- Enterprise-wide View
- Governance Process
- Technology as an Enterprise-wide Strategic Asset
- Investment in Technology
- Advisory Committees
- Organizational Structure
- Information Technology Leadership
- Communications
- User Support and Help Desk Services
- Training

RECOMMENDATION SD-2: CREATE BUSINESS ANALYST POSITIONS TO SUPPORT TECHNOLOGY SERVICE DELIVERY

Business Analysts

Service delivery is done at the departmental level. Some City departments have established their own internal information technology resources to support their technical needs so their direct customer service can be enhanced. The Police Department and the Library are current examples of departments with significant information technology resources. Other departments have used existing personnel as internal technology staff who may have an interest and/or an

ability to understand technology. In order to manage information technology as a City-wide asset, departments should be provided individualized support. These individuals could be part of the new ITD or have an indirect "dotted line" reporting relationship to the technology department, as shown in *Exhibit VI-7*. This structure allows the departments to continue to meet their own needs internally where it is warranted, provide training and support to these departmental resources, and allow the CIO to facilitate overall information technology governance City-wide through ensuring standard support and quality of technical operations.

We recommend that the City implement a business analyst position that could be resident in a department to provide department specific support. Regardless of whether the business analyst is in ITD or a City department, all business analysts will meet the same job description and skill requirements.

A business analyst should possess the following:

- Knowledge of:
  - Application analysis and design
  - Application programming, testing and debugging
  - Database design and data access
  - Distributed application development, use of related middleware products and deployment of multi-tier components
  - Mainframe and computer operating systems
  - Office automation products
  - Work planning and status reporting
  - Project management
- Ability to:
  - Work directly with department heads and assistants to define project scope and requirements for business systems
  - Regularly report to both technology and other executive management
  - Analyze client needs, define the business requirements, design business applications to create a business case
  - Create and carry out project plans, lead teams to meet business goals
  - Work directly with systems support teams and users to support applications, resolve problems, make recommendations or effect solutions as appropriate
  - Ensure proper integration with other enterprise-wide applications
  - Create and document workflows, test and deploy business process solutions
  - Create user acceptance plans
  - Plan, organize, direct and evaluate the work of staff assigned to various technology-related projects
  - Maintain current technical knowledge and provide training to staff and users
  - Evaluate software and work effectively with vendors to integrate purchased software
  - Research new technology and application software that is applicable to business function

To address some of the turf issues mentioned earlier in this section of the report there are two options to consider for business analysts reporting relationships.

For departments that have complex and wide-ranging business needs the business analyst is best positioned as a direct report to the departmental organizational structure. Simultaneously, to achieve the enterprise information technology mission and goals the business analyst would also have an indirect "dotted line" reporting relationship to the information technology department's Support Services Bureau manager. This indirect reporting relationship ensures that the department adheres to information technology enterprise standards and practices.

For departments that have less complex business needs and/or fewer resources, the business analyst is best positioned as a direct report to the information technology department's Support Services Bureau. Depending on workload a business analyst could be shared across departments. To ensure alignment with and achievement of departmental business needs the business analyst would also have an indirect ("dotted line") reporting relationship to their assigned Department Director.

Regardless, both options are based on the effective assignment of personnel aligned with the department needs. Additionally, senior management should share a common vision and set of principles and be united in their resolve to seize opportunities to make the most of the City's information technology investment opportunities. This shared vision and commitment should also be clearly communicated to staff.

Based upon our assessment, some City departments currently have staff filling the business Analyst role and would not require net new positions. In these cases, creating the Business Analyst role may only require reclassifying the position. There are some cases where the Business Analyst position will require hiring of additional personnel.

Integrated Communication Coordination

As represented in *Exhibit VI-8*, we believe this proposed organizational structure provides integrated communication, coordination and linkage between ITD's Infrastructure, ITD's Support Services and the City's departments.

EXHIBIT VI-8: INTEGRATED COMMUNICATION COORDINATION

Without this integrated approach, information technology data exists in a sea of dissimilar infrastructure components, technical processes and skill sets where the proper interpretation of information technology data is often splintered and rendered useless. As a result, data is siloed, information about the infrastructure is often "trapped" and provides little intelligence and enterprise-wide business solutions.

Additionally, information technology service and management processes are often ad-hoc, which makes responses inefficient and potentially error prone, resulting in higher cost, fragmented data, reactive service delivery and poor alignment of information technology

across the City. When raw data about information technology infrastructure is embedded within technology silos, intelligence and business solutions are limited. Without the ability to link infrastructure and support services to department's objectives, planning, and measured results, the CIO and ITD could operate blindly. If the disparate City, departmental and ITD needs are not consolidated with a holistic approach, the CIO will not have a foundation from which to create and maximize the City's information technology investment and resources.

THE FINDINGS ASSOCIATED TO THIS RECOMMENDATION ARE:

- Technology as an Enterprise-wide Strategic Asset
- Organizational Structure
- Information Systems Master Plan
- Communications
- Training
- Project Management
- Resource Skill Mix

RECOMMENDATION SD-3: REDEFINE TECHNOLOGY LEADERSHIP: HIRE A CIO

Information is the key. Identifying, quantifying, and delivering information is the most important strategic role of the CIO today; not the keepers of the information technology shop. The CIO is the executive level person to translate between information technology and the business. If the City and its departments view information technology as a commodity and not as an enterprise-wide asset, everyone will buy their own solution with the end result being systems that don't talk to each other. A CIO is necessary to bring coordination and focus.

Aligning information technology with business goals is a process of building trust and gaining consensus through executive communication. Successful alignment begins when a CIO takes responsibility of information technology. A CIO actively seeks out ways to use information technology to fulfill both internal and external needs. In this way the CIO becomes an innovator who uses his or her vision to apply information technology in new creative ways. The CIO's emphasis shifts from running the business to changing the business. The CIO must use their knowledge of technology and industry leading practices to anticipate how information technology can solve tomorrow's problems today. This is in contrast to where the CIO is solving yesterday's problems today.

The City of Long Beach should hire a CIO with the authority to establish information technology vision, policies and standards, and to implement the governance structure and processes. In addition, this will require a combination of leadership, management, and technical skills to lead the development, implementation, and oversight of the City's technology vision and resources.

As head of the City-wide information technology organization, the CIO is accountable and has authority for all of the City's information technology policy and operations. These fall into three categories:

- Core information technology – includes infrastructure, architecture and standards-setting, application development and maintenance, integration and data integrity
- Business applications – the CIO must apply an architectural knowledge of applications at the enterprise and business unit levels and show expertise with the mission-critical applications, while delegating day-to-day responsibilities to direct reports as befits the City's complex, heterogeneous organization
- Enterprise-wide infrastructure – includes business processes and workflows, security and privacy, risk management (including business continuity and compliance) and quality improvement. The information technology leader sets policies in collaboration with other management executives and department leaders, as appropriate, and delivers necessary tools and systems

Position Description

The CIO should have a technology background, with experience in both infrastructure and applications development, complemented by demonstrated business knowledge. The business knowledge must be relevant to the operational environment of the City. The CIO candidate should also have demonstrated financial and accounting acumen as well as a proven ability to prioritize competing demands.

The candidate should have substantial management experience in these categories:

- Overseeing large, distributed information technology environments
- Leading information technology enterprise-wide resources and project management
- Staffing and sourcing alternatives, including remote, contract and outsourced
- Working in a matrixed organizational structure
- Crisis response and recovery

The CIO's organization is responsible and accountable for selecting, approving and managing all major procured information technology products and services, including anything that touches multiple business functions and processes or requires significant internal information technology support. The CIO periodically reviews all major information technology contracts entered into by the City.

The CIO should manage the information technology department in an efficient, cost-effective and transparent manner, benchmarking costs against other similar governmental entities or commercial service providers. The CIO should apply leading industry practices to information technology project management, such as prototyping, tracking and post-implementation auditing. In major information technology capital initiatives, the CIO, or a designee, partners with department sponsors to establish a business case, and to share ownership and accountability for the project and its outcomes.

The CIO also:

- Oversees a core group of information technology staff that provides cross-enterprise services
- Defines and executes an agile sourcing strategy, while maintaining a substantial core of information technology managers and key employees internally

- Provides ITD's formal leadership development program, works with HR to identify candidates for leadership tracks and succession planning, and creates a curriculum that emphasizes business and people skills
- Controls strategic execution of enterprise-wide technology resources
- Provides oversight of outsourcing vendor management of outsourcing
- Teaches the ITD staff to be business people and know the business
- Provides strategic management and accountability for multimillion dollar enterprise-wide expenditures

The CIO's job performance should be measured against achievements strategically important to the City, and performance objectives should be determined on that basis. Information technology operational excellence is a basic expectation.

A strong relationship with the City Manager is the single most important factor in determining the CIO's level of authority and levels of responsibility of other factors. The City Manager can help ensure that the CIO has an influential role in the strategic and tactical decisions that are made throughout the information technology organization.

The CIO is an integral member of the City's executive committee, and would participate in all strategic and policy tasks and responsibilities. In addition, the CIO is expected to facilitate a strategic information technology governance committee - ITAC (inclusive of key department leaders) to prioritize business initiatives that leverage technology.

As mentioned earlier, the CIO should report directly to the City Manager and work closely with the City's executive management team in leading day-to-day operations. The CIO has two main constituencies: other executive peers and external stakeholders. The roles and responsibilities of the CIO are identified in *Table VI-1*.

> *"…More and more cities want to upgrade the CIO position, upgrade the talent…"*
> SOURCE: CIO INSIGHTS: HELP WANTED CITY CIOS, STATETECH, FALL 2005, MIKE FADEN

TABLE VI-1: MAJOR ROLES AND RESPONSIBILITIES OF THE CIO

ROLE	RESPONSIBILITY AREA	DESCRIPTION OF RESPONSIBILITY
Policy Management	Standards / Architecture	Establish standards to guide the procurement and deployment of key pieces of the infrastructure. Standards may apply to a number of departments and areas, including desktop hardware and software, networks, enterprise operating systems and databases.
	Strategic Planning	Develop and maintain the technology plan for the enterprise. The plan should align with the overall strategic business plan and integrate specific departmental technology needs.
	Security/Privacy	Establish consistent and appropriate security and privacy policies for internal and external use across the enterprise. Ensure there are no weak links in enterprise or departmental security or privacy systems. Enable economies of scale by providing a consistent set of tools and training.
Operations Management	Information Technology Service Delivery	Manage the enterprise's technology infrastructure such as data centers, telecommunication networks, and information technology personnel. Enable economies of scale with consistent infrastructure across departments, capacity planning and a centralized talent pool. Balance requirements for robust infrastructure with disaster recovery planning and departmental needs for control and flexibility.

ROLE	RESPONSIBILITY AREA	DESCRIPTION OF RESPONSIBILITY
	Portal Management	Manage and establish portal procedures and protocols. Reduce maintenance costs and enhance user experience by directing across enterprise portals standards for look and feel, effective use of shared services, and common development practices and tools.
	Enterprise Applications	Oversee and manage enterprise wide applications to affect economies of scale, diminish required interfaces, and reduce training and help desk costs. Applications commonly used by the entire enterprise include e-mail, enterprise business solutions and any other universally applied office systems.
	Application Development	Oversee and set standards for application development to ensure multi-program synergies, common data modeling, effective training methods, sourcing decisions, and prioritization of shared resources.
	Help Desk	Oversee Help Desk support for all software applications and technology solutions that support the enterprise. Facilitate collaboration between program managers, application developers and support staff to ensure uniform support for all programs. Enable economies of scale with centralized training programs and a consistent asset management strategy.
	Project Management	Ensure consistency of project management skills and tools. Centralized project management or oversight ensures that the highest business/information technology priorities are given the best talent and most resources and increases the enterprise's ability to capitalize on knowledge sharing practices.
Process Management	Procurement	Align procurement decisions and processes with information technology goals and the unique pace of technology acquisition and deployment. Enable economies of scale through centralized vendor negotiations and purchasing. Leverage existing enterprise procurement checks and balances to protect against misdeeds.
	Budgeting	Participate in information technology budget funding approval process to ensure prioritization of projects across the enterprise is consistent with the ISMP and overall business goals. Align information technology resources with business and political needs.
	Alternative Service Delivery Oversight	Oversight of outsourced projects or other service delivery not managed by the central information technology support group. Monitor service delivery accountability to the overall enterprise. Facilitate economies of scale with other internally and externally managed projects. Ensure all service delivery aligns with standard systems development methodologies.
	Performance Measurement	Continually assess the productivity of information technology systems and services including training, development tools, resource management and effectiveness of project prioritization. Establish service level agreements with appropriate departments and users.
	Business Process Re-Engineering	Take a leadership role in business process re-engineering. Provide an enterprise-wide, objective view to ensure the consideration of technology in re-engineering decisions.

The cornerstone to implement many of the recommendations contained in this report is grounded in having a CIO. In addition to the current slate of technology projects, an ERP implementation will most likely be undertaken within the next few years. These new and anticipated projects will require multi-million dollar expenditures and enterprise-wide technology and functional changes. The City needs to conduct an immediate search for a CIO whose qualifications match the aforementioned skill set in management and technology. The challenges faced by the City will make the position appealing to many technology leaders who are proven long-term problem solvers. The City must have a strong CIO if it is to have a successful information technology operation.

THE FINDINGS ASSOCIATED TO THIS RECOMMENDATION ARE:

- Enterprise-wide View
- Governance Process
- Technology as an Enterprise-wide Strategic Asset
- Investment in Technology
- Information Technology Leadership

Outsourcing

RECOMMENDATION SD-4: THE CITY SHOULD CONSIDER LIMITED OUTSOURCING AT THIS TIME

Organizations are increasingly considering outsourcing as a strategic management tool, which can be leveraged to allow them to focus on their core competencies and deploy limited resources on achieving business benefits. Before taking into account potential benefits and risks associated with an information technology outsourcing initiative, the City should be operating with a new information technology organizational structure and level of governance that creates a solid foundation of standards and policies to move forward with any information technology strategy including an outsourcing initiative.

Outsourcing can be viewed as a means to reduce costs, improve customer satisfaction, and provide enhanced efficiency and effectiveness. However, many organizations never realize the full benefits of an outsourcing relationship. In any outsourcing partnership, robust organization and the definition of roles and expectations are key ingredients. The process of considering and/or implementing an outsourcing solution must be systematic, fully documented and enforced to achieve the desired results of a successful outsourcing implementation. This demands a multi-step approach, including planning, analysis, design, implementation, and operations phases, along with a contingency exit strategy. Unless these described elements are in place, any cost savings would not be realized.

Currently, the City can continue to benefit from the use of third party service providers to perform non-core information technology services. However, based upon the state of the City's current information technology activities and the levels of outsourcing options (individual, functional, and/or facilities management), the City is neither prepared for, nor should outsource, its entire information technology function.

However, there are some limited opportunities that may be favorable for short term information technology outsourcing and could assist the City in moving to a new information technology organizational structure and governance process. They are:

- Consolidate current PC desktop / laptop procurement
- Expand initial software setup program to include all approved / published standard software including security, spyware, monitoring, groupware, etc,.
- PC desktop / laptop hardware maintenance service and replacement
- Consolidate printer acquisition and support services
- Training (technical staff and end-users)

Before the City considers further outsourcing opportunities, whether cabling radio, telephone, etc., it must create a business environment that addresses the requirements listed below. These requirements are:

- Develop a clear vision, goals and objectives regarding information technology outsourcing
- Define how outsourcing would fit into the City's overall business strategy and customer service delivery
- Determine organizational challenges that would be incurred within an outsourcing initiative
- Determine what core information technology competencies the City wants to retain and why
- Identify the information technology functions suitable for outsourcing
- Select an executive sponsor for outsourcing
- Develop a mission to make outsourcing work
- Identify potential risks and formulate mitigation of outsourcing
- Clearly articulate a methodology and process to create and measure the value of outsourcing
- Communicate findings to key stakeholders
- Develop oversight management requirements for the Support Services Bureau Manager

Subsequently, after the information technology organizational and governance restructuring has been adopted and implemented, a formal outsourcing readiness assessment should be completed which includes a Return on Investment (ROI) analysis as well as a benefit / risk evaluation.

> *"…ROI is measured in several ways, but the most important factor is not how much money we saved, but rather the impact on customer satisfaction. Our mission was to fix a simple problem… that frustrated our customers. The ultimate success indicator is whether that frustration still exists.*
>
> SOURCE: TRANSFORMATIONAL, NOV 1, 2004, JOHN EAGLE

THE FINDINGS ASSOCIATED TO THIS RECOMMENDATION ARE:

- Outsourcing
- Fiscal Focus
- Training
- Aging Technology
- Acquisition Process

MANAGEMENT PRACTICES RECOMMENDATIONS

Introduction

The recommendations in this section have been developed to address the findings related to management practices.

Information Systems Master Plan

RECOMMENDATION MP-1: UPDATE AND FORMALLY ADOPT THE ISMP BASED UPON THE CURRENT SITUATION, DEVELOP AN IMPLEMENTATION PLAN AND COMMUNICATE THE PLAN THROUGHOUT THE CITY.

We recommend that the ISMP be formally adopted as the policy for all City technology development and operations. This plan should be the blue print for all decision making for future technology planning, and acquisitions.

While the current ISMP addresses application needs and related issues, it does not include an implementation plan. We believe that an implementation plan with clearly defined dates and responsibilities for action and dependencies would greatly enhance the usage of the ISMP.

The adoption of the ISMP would also enhance a needed enterprise-wide approach to technology. Associated with the need for the ISMP as a policy is the need for it to be updated and monitored on a regular basis.

If the staff and policy makers are not aware of the ISMP, it will not be used. Thus, communicating the plan throughout the organization should be a priority.

THE FINDINGS ASSOCIATED TO THIS RECOMMENDATION ARE:

- Governance Process
- Technology as an Enterprise-wide Strategic Asset
- Investment in Technology
- Information Technology Leadership
- Information Systems Master Plan
- Fiscal Focus

Communications

RECOMMENDATION MP-2: THE CITY SHOULD DEVELOP A COMPREHENSIVE COMMUNICATIONS PLAN FOR ALL TECHNOLOGY-RELATED ITEMS.

A comprehensive communications plan focuses on three items:

1. What should be communicated?
2. Who is the audience that should receive this information?
3. How should the information be conveyed?

The communication plan should address communications from the top down, from the bottom up and sideways throughout the organization, especially across departments.

As noted above, specific information distribution needs to be tailored to the targeted audience and may vary by group. However, the City should utilize the power of the Intranet and provide much of the basic information related to technology using this medium. Items that should be available through the Intranet and network access include:

- ISMP
- Technology policies and forms
- Technology standards
- Personal Computer replacement schedules
- Project status for major projects, including departmental projects
- Training opportunities
- Announcements of general interest (e.g. TSD changed the names of a service bureau in December 2005)

THE FINDINGS ASSOCIATED TO THIS RECOMMENDATION ARE:

- Enterprise-wide View
- Technology as an Enterprise-wide Strategic Asset
- Advisory Committees
- Communications

User Support and Help Desk Services

RECOMMENDATION MP-3: ENHANCE HELP DESK PROCEDURES

The current ITD customer support focus should be consolidated into one bureau from an organizational perspective This would maintain the single point of contact for issues (the Help Desk) and would also have all individuals tasked with resolving issues utilizing the same tracking and reporting system, so a user can be aware of status.

The Help Desk support staff should receive additional training to enable them to resolve a broader scope of issues during the initial phone call. All Help Desk staff should be brought up to the same level of proficiency so the probability of resolving an issue is the same regardless of staff.

The Help Desk staff should inform the caller of the ticket or incident number at the time of the call. Currently, some callers can track the status of the ticket through the Remedy system that is available through the internal Intranet. Additionally, when the Help Desk sends a notification email to a caller with the ticket number, they should also include a link to the Remedy system.

Help Desk staff should not be evaluated solely based on the number of closed tickets, but also on effective and complete problem resolution. Thus, the initiating technician should report and deal with the underlying problem, not just close a ticket and open a new one for someone else.

ITD should start an immediate customer feedback process. For every call to the Help Desk, there should be an automatic email sent to the requestor at the time the ticket is closed, or within ten days of the initial call, asking for comments on the customer service. This should include timeliness, responsiveness, resolution, the staff member's service demeanor and knowledge, and any open issues. This feedback should be incorporated into the training plans for all Help Desk and service support technicians, as well as being a source to gauge overall Help Desk effectiveness, efficiency and performance measurement.

In addition to the customer feedback process, ITD should do a semi-annual survey of users to gauge overall satisfaction. The survey should be designed to provide ITD and City management with the ability to track satisfaction with service over time and make adjustments as needed.

The City should be willing to make appropriate investments in information technology support staff, technical and end user training, as well as develop innovative strategies to recruit, retain, and continuously train information technology personnel.

THE FINDINGS ASSOCIATED TO THIS RECOMMENDATION ARE:

- Communications
- User Support and Help Desk Services
- Training
- Resource Skill Mix

Fiscal Focus

RECOMMENDATION MP-4: VIEW TECHNOLOGY DECISIONS ON A LONG-TERM BASIS, CONSIDERING THE LIFECYCLE OF COSTS AND BENEFITS RATHER THAN THE CURRENT FISCAL YEAR COST IMPACT.

The CIO should develop an analysis of the current situation and prepare a roadmap to the future, utilizing the ISMP as a starting point, but updating it to reflect the changes that have

taken place. This roadmap should include realistic investments in technology, applications and people, both in ITD and in the departments as well as establish priorities for the enterprise as a whole.

Realistic cost/benefit analyses should be undertaken when viewing technology decisions and should include both the hard and "soft" costs of both new systems versus doing nothing, or maintaining the status quo. The Finance Department and maybe the City Auditor's Office should be participants, or at least reviewers, of multi-year cost/benefit analyses.

THE FINDINGS ASSOCIATED TO THIS RECOMMENDATION ARE:

- Enterprise-wide View
- Technology as an Enterprise-wide Strategic Asset
- Investment in Technology
- Information Technology Leadership
- Information Systems Master Plan
- Fiscal Focus
- Aging Technology

Training

> *"…A good training program is one that includes a good mix of intensive training sessions with seasoned professionals or professional trainers, followed by on-the-job practice of lessons learned in the training. Usually it means going for training for a week or two, then working in the office for anywhere from a week to a month to practice what you have learned… Training is not just a nice perk to look for…it is an absolute requirement just like air and water, a desk and a computer..."*
>
> SOURCE: WHY TRAINING IS IMPORTANT FOR YOUR CAREER SUCCESS, CICI MATTIUZZI, MAY 12, 2005

RECOMMENDATION MP-5: ESTABLISH A FORMAL TECHNOLOGY TRAINING PROGRAM.

As part of our review we looked at training alternatives that could be used by the City. These alternatives could be classified into two service categories: in-house, or outside vendor delivered.

In-house training programs could encompass one or more of the following forums and topics:

- One-on-one formalized training
- Classroom / Instructor led, e.g. new employee orientation including pc orientation, security protocols, etc.
- Enhanced Intranet accessibility including Frequently Asked Questions (FAQs), Help Desk help guides, enterprise-wide Tips & Tricks, e.g. MS Word, MS Excel, etc.
- On-site vendor application specific delivered training

Outside vendor delivered programs could include the following forums:

- Computer-based Training (CBTs) / e-learning via licensed or purchased Intranet or Internet access
- One-on-one, classroom (on-site or offsite) formalized training, and professional development from vendors such as:

  - ExecuTrain
  - Softlink
  - Interactive Computers and Multimedia Inc.
  - Local area vendors

- Formal seminars, conferences or user groups

Outside vendor delivery programs, such as those offered by ExecuTrain, Softlink and WatchIT provide a range of delivery options (classroom, on-demand interactive learning, resource assessments, certifications, etc.), course categories (networks and operating systems, programming and development tools, database and collaboration tools, business applications, etc.), e-library facilities, and call-in assistance.

> *"…Training plans should seek to train as many employees as possible. There are different means of achieving this. Technology-based training enables employers to provide in-house training materials that can be used by all their employees. The transfer of acquired knowledge to other employees can also stretch training dollars. While there is a tendency to send the brightest employees for outside training, an effort should be made to ensure that all employees have access to training. This reduces the risk of losing too much knowledge if a key employee leaves…"*
>
> SOURCE: STRATEGIS.GC.CA, WEBSITE, UPDATED MAY 28, 2004

Although a comprehensive and professional information technology education curriculum, training program, and evaluation method is needed within the City it is acknowledged that this may not be achievable in the short term due to competing priorities, budget restraints and organizational preparedness. However, without immediately re-establishing a training program, the City will likely be faced with increasing technology problems and loss of efficiency within its information technology and system application user workforce. Technology training should be for both the technology providers in ITD and the users in the departments.

While investments in information technology infrastructure (hardware and software) are important and must occur (see Recommendation MP-5: Aging Technology), these will not be successful unless the City has skilled and trained personnel. This technology training program should be enterprise-wide in focus and integrate department specific as well as central technology based needs. The department specific needs should address the training needs of the departmental staff that perform technology functions. Besides department specific training, they also need technology training to support their assigned technology-related responsibilities.

Enterprise-wide needs would address areas such as Microsoft Office Suite, Lotus Notes, and new employee education including PC orientation. Specific department training would focus on FAMIS, library systems, health and human services or other such department specific information technology.

As an initial step in establishing a formal technology training program, we recommend the City begin its professional development through such activities as:

- Reinvigorating its new employee orientation with additional information technology components. This could include:
  - Beyond email training in Lotus Notes
  - MS Office using Word, Excel and PowerPoint

  - Access to Intranet FAQ, and Help Desk "help guides" (see below)
  - Security policies and protocols including Internet access
  - Clearly communicating the efforts and results of revitalized professional development program to end users

- Using the Intranet and providing items such as:
  - Frequently Asked Questions (FAQs)
  - Help Desk "help guides"
  - Enterprise-wide Tips & Tricks, e.g. MS Word, MS Excel
  - CBTs

Beyond these initial steps, our mid to long term recommendations focus on:

- Licensing or procuring additional e-learning courses / CBTs for assessment, self learning, testing and certifications via the City's Intranet or Internet access
- Initiating contracts with outside vendors for formal training in order to improve and maintain technical and department specific knowledge
- Formal seminars, conferences or user groups that align business objectives with skill requirements
- Developing and implementing a formal professional development program that is enterprise-wide in focus and integrates department specific, as well as technology based needs.

> *"…The 'corporate university' model is being replaced by 'learning services organizations.' The focus is changing from "you come to us to be trained" to "we will deliver the training, support, and consulting you need - right to you - anytime, anywhere..."*
>
> SOURCE: BERSIN & ASSOCIATES' 2005-2006 INDUSTRY ANALYSIS, BERSIN & ASSOCIATES, DECEMBER, 2005

As the City positions itself for an eventual ERP implementation, that will span anywhere from 9 to 18 months in duration, it must now develop and implement a solid training program that builds a sustainable capacity of skilled resources. Bottom line…the City must be better prepared to use technology in the future. And the way to prepare is to invest in and develop a workforce that will be enabled and empowered to create information technology solutions which are effective, efficient and provide economy of effort.

THE FINDINGS ASSOCIATED TO THIS RECOMMENDATION ARE:

- Investment in Technology
- Information Technology Leadership
- Communications
- User Support and Help Desk Services
- Training
- Project management
- Resource Skill Mix

Aging Technology

RECOMMENDATION MP-6: ESTABLISH A SCHEDULE AND TIMEFRAME TO REPLACE AND RETIRE THE CITY'S LEGACY SYSTEMS.

The City understands the issues surrounding existing legacy systems, and the ISMP has documented the need to make changes. These changes will take both time and money to accomplish, however the City is not currently ready to provide either in a major enterprise-wide manner.

The City has begun the process of replacing some legacy applications; however there are a large number of significant applications that are not yet scheduled for replacement (e.g. financials). The recent experience in looking at ERP solutions has provided the City with a reasonable estimate of the overall cost of replacing these legacy systems. The City needs to determine a reasonable timeline for replacement, determine how to fund the changes and include this information in an updated ISMP. This plan should be communicated throughout the City (see Recommendation MP-2: Communications).

THE FINDINGS ASSOCIATED TO THIS RECOMMENDATION ARE:

- Enterprise-wide View
- Technology as an Enterprise-wide Strategic Asset
- Investment in Technology
- Information Systems Master Plan
- Fiscal Focus
- Aging Technology

Technology Acquisition Process

RECOMMENDATION MP-7: CHANGE THE ACQUISITION PROCESS TO PROVIDE MORE ACCOUNTABILITY AND RESPONSIBILITY TO THE DEPARTMENT HEADS AND CITY CIO.

The City should eliminate the requirement that departments obtain budget office support for the purchase of technology equipment and supplies over $500. Instead, the requirement should be that the purchases be reviewed by ITD to ensure that the proposed equipment conforms to City standards (see Governance for a discussion of standards setting and the review process). If the purchase conforms to standards, it should be the responsibility of the department head to authorize the technology purchase, regardless of cost, in the same manner as other expenditures. If the proposed equipment is not within the City standards, then the department should be required to obtain the CIO's approval to deviate from the standards or search out equipment that does meet standards.

The enforcement of standards is a very important mechanism in the controlling of technology costs throughout the City. As noted in the *Governance* section of this report, the CIO should be allowed to waive standards for valid business reasons, however this should be the exception rather than the rule.

Where possible the City should utilize strategic procurement and contract management approaches to negotiate City-wide contracts with suppliers to provide mechanisms for achieving best value through the procurement process.

THE FINDINGS ASSOCIATED TO THIS RECOMMENDATION ARE:

- Investment in Technology
- Organizational Structure
- Fiscal Focus

RECOMMENDATION MP-8: AUTOMATE THE PROCESS TO REQUEST EQUIPMENT AND SOFTWARE.

ITD should automate the process to request equipment and software. Forms should be available on the Intranet that can be completed electronically, forwarded to the proper approving authority in the department for signature, either automatically using a workflow engine or via email, and then submitted to ITD for review of conformance to standards and processing. There should also be a way to track the progress of a request and determine its status throughout the process.

THE FINDINGS ASSOCIATED TO THIS RECOMMENDATION ARE:

- Investment in Technology
- Fiscal Focus
- Aging Technology
- Acquisition Process

RECOMMENDATION MP-9: ITD SHOULD OUTSOURCE THE SETUP OF PERSONAL COMPUTERS AND WIRELESS DEVICES.

As part of the acquisition process ITD should proceed with outsourcing the initial setup / standard configuration of personal computers and wireless devices (e.g. the Blackberry). This will improve customer service and satisfaction by reducing the time required to actually install a device for a user and have it operational. Outsourcing will also free ITD staff from these initial setup/configuration tasks and allow for redeployment to other value-added services.

THE FINDINGS ASSOCIATED TO THIS RECOMMENDATION ARE:

- Outsourcing
- Fiscal Focus
- Aging Technology
- Acquisition Process

Project Management

RECOMMENDATION MP-10: THE CITY SHOULD IDENTIFY THOSE POSITIONS WHERE PROJECT MANAGEMENT IS A PRIMARY FUNCTION OF THE JOB AND REQUIRE CERTIFICATION FOR NEW HIRES AND PROMOTIONS.

There are a number of technology positions within ITD, and possibly within some departments, where project management is the primary function of the job. These positions should be identified and job descriptions changed to require project management certification. As any of these positions becomes vacant, one of the requirements should be a project management certification (e.g. Project Management Professional (PMP) from Project Management Institute; or information technology Project+TM from CompTIA. For those incumbents who do not have the certification, the City should provide incentives for staff to obtain certification, including enrollment in training classes, payment for certification testing and payment for PMI membership dues and events. ITD should provide this incentive to select technology staff, including those in other departments.

In the long term, as the City develops a project management focus, a project management office should be established in the ITD Support Services Bureau to coordinate, track and assist project managers.

The role of the Project Manager would be to:

- Work closely with the department to establish scope, priorities, schedule and deliverables of a proposed project
- Develop and maintain a detailed project plan
- Assign and supervise project activities and resources
- Manage project deliverables and provide early warning of risks and issues that jeopardizes the project in any way
- Periodically make presentations to the TRG and ISPC (see Governance) on the status of the project
- Utilize a project team when deemed necessary

The responsibilities of the Project Manager would be to:

- Prepare a detailed plan and review with the department to ensure that project objectives are being met
- Identify and recruit needed resources and assign tasks
- Track and monitor all activities, issues and deliverables against the project plan
- Provide periodic status reports to the department head and information technology Leader
- Facilitate project team activities and communications
- Anticipate project risks and take actions to minimize adverse impact
- Proactively communicate issues, obstacles, risks, delays and resource problems to the department head and information technology leader along with recommendations or options for consideration.

THE FINDINGS ASSOCIATED TO THIS RECOMMENDATION ARE:

- Organizational Structure
- Project Management

Resource Skill Mix

RECOMMENDATION MP-11: THE CITY SHOULD CONDUCT A DETAILED SKILLS INVENTORY FOR ALL INFORMATION TECHNOLOGY STAFF

As the City moves to replace the legacy systems, there will be a gap between current staff skills and skills needed by the newer systems. The CIO should manage the development of an inventory of existing skills for all technology positions, both within the ITD and in departments. This inventory of skills should be compared to the skill sets expected to be needed in the future. This can be the basis for the CIO to determine a staffing and hiring plan, as well as provide input for position classification and compensation review.

Potential criteria for evaluating future needs could be:

- Application development language skills
- Web project development and tools
- Project management skills
- Transfer of learning to job performance
- Content management systems
- Assessment, design and evaluation methodologies

Potential benefits to the City and employee are:

- Identification of technical and management training opportunities and needs
- Reduction of "burn-out" and turnover
- Alignment of resources with current and projected needs
- Assistance in developing an outsourcing vision and strategy
- Enhancement of customers satisfaction and confidence
- Improvement of delivery capabilities
- Augmentation of individual and team performance
- Recognition for individual skill development and learning efforts

THE FINDINGS ASSOCIATED TO THIS RECOMMENDATION ARE:

- Investment in Technology
- Training
- Resource Skill Mix

RECOMMENDATION MP-12: DEVELOP TRAINING PLANS FOR INFORMATION TECHNOLOGY STAFF

Based on the skills inventory results, the CIO should work with bureau managers and staff members to develop individual training plans. These plans should be focused on the development of requisite skills to support the technology needs of the City. As with the skills inventory, we recommend developing training plans for those technology staff both within the ITD and in departments. The training plans should include both technical and project management courses. These plans should be updated on an annual basis and can be included as part of the annual evaluation process.

THE FINDINGS ASSOCIATED TO THIS RECOMMENDATION ARE:

- Investment in Technology
- Fiscal Focus
- Training
- Project Management

RECOMMENDATION MP-13: DEVELOP A RECRUITMENT PLAN TO OBTAIN THE NECESSARY TECHNOLOGY SKILLS THAT ARE REQUIRED FOR THE FUTURE

Once the skill inventory has been established and the training plans developed, there will probably be some gaps in skills that will need to be filled based upon realistic expectations of skill development of existing staff. This may result in recruitment from the outside to replace existing managers and supervisors who retire, rather than promoting from within if skill sets are missing. This may also result in the creation of additional technology positions, both within ITD and the departments, to obtain specific skill sets. Especially in the public safety areas (Police and Fire), the City should have dedicated technology individuals in positions of responsibility rather than uniformed officers acting as technologists.

THE FINDINGS ASSOCIATED TO THIS RECOMMENDATION ARE:

- Investment in Technology
- Fiscal Focus
- Training
- Resource Skill Mix

RECOMMENDATION MP-14: THE CITY SHOULD DEVELOP SUCCESSION PLANS FOR KEY TECHNOLOGY-RELATED POSITIONS.

This planning process should start with all key positions where the incumbent could retire within the next three years and then be expanded to cover all key technology positions within the City. These succession plans should be integrated with the training plans to make sure that the people who are moving up in the organization obtain the proper skills to manage in the future.

THE FINDINGS ASSOCIATED TO THIS RECOMMENDATION ARE:

- Information Technology Leadership
- Training
- Resource Skill Mix

Chargeback System

RECOMMENDATION MP-15: THE CITY SHOULD MOVE FROM A DEPARTMENTAL CHARGEBACK SYSTEM TO A COST ALLOCATION SYSTEM FOR CENTRAL TECHNOLOGY COST DISTRIBUTION

As we understand the City's management philosophy, service delivery costs should reflect all costs, including those central costs not located within a service delivery organization, including technology. However, as previously noted, a chargeback system, such as used in Long Beach, results in a significant amount of non-productive City staff time to develop the charges and monthly invoices, create journal entries, review, and resolve any disputed charges.

A more efficient system would include all the fixed costs as part of an indirect cost allocation system (sometimes called an Indirect Cost Allocation Plan used for recovery of administrative costs from federal grants). The calculation of the fixed costs would occur once a year during the budget cycle and the appropriate fixed costs would then be included within the departmental budgets as an allocation. The variable costs would also be calculated at the time of budget development and would include the current number of cell phones, personal computers, long distance charges, etc., based upon the coming budget year rates. During the budget process, the department could request additional items of variable costs, and these would be reviewed as any other new or additional service request.

The calculation of the proper indirect cost allocation is a cost-accounting function that should be included within the Finance Department. There would be the need for ITD to provide some information on usage and inventory of equipment however the basic calculation should be done within Finance at the same time as other indirect cost allocations are completed. Finance should then journal entry the proper charges to the department, once, or at most, twice a year. At the end of the year, during the development of the next year's charges, there would be an adjustment (plus or minus) for any differences from the assumptions used in the previous year's calculations and these adjustments would be included in the coming year's allocations.

THE FINDINGS ASSOCIATED TO THIS RECOMMENDATION ARE:

- Fiscal Focus
- Chargeback System

RECOMMENDATION MP-16: CHANGE THE PROCESS TO RECOVER COST OF PERSONAL CALLS.

The cost recovery of personal calls for both long-distance land lines and from cell phones is one area where there is an opportunity to reduce costs. The City is currently spending more to

recover costs than the expense incurred from personal calls – approximately $17,000. For long-distance charges from land lines, the City Auditor's office should conduct periodic audits of long distance usage and determine if there is a pattern of abuse in a given area or by a certain individual. These should then be addressed by the department.

For cell phone usage, the City should develop a basic method of determining whether an individual needs a cell phone for City use and how much time would be required per month. If an individual stays within the monthly limit, the City should not be concerned about personal versus business use. If the individual goes over the monthly limit, then the individual should have to justify the usage and either pay the City for excess charges or have the phone changed to a different plan with additional minutes. At this point this becomes a management issue to determine if the individual truly needs a cell phone. The City Auditor's office should conduct periodic audits of cell phone usage to determine if an individual should have a cell phone and how much business time should be provided. One variation in the above recommendation would be to allow an individual to buy additional minutes for personal use by increasing the monthly plan and paying for these additional personal minutes either through a monthly check to the City or a payroll deduction.

THE FINDINGS ASSOCIATED TO THIS RECOMMENDATION ARE:

- Fiscal Focus
- Chargeback System

IMPLEMENTATION PLAN

The Implementation Plan contains actions required in order to successfully implement the recommendations contained in this report. The Implementation Plan is a guide which identifies key elements associated with each recommendation. The Implementation Plan addresses the following:

- Recommendation
- Associated Findings
- High-Level Action Steps
- Lead Responsibility
- Support Responsibility
- Performance Measures
- Resource Provider